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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/075,912 | 02/14/2002 | Maximilian Fleischer | A35004 (071308.0293) | 1712 |
| 21003 | 7590 | 12/14/2004 | EXAMINER | |
| BAKER & BOTTS 30 ROCKEFELLER PLAZA NEW YORK, NY 10112 | | | SINES, BRIAN J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1743 | |
| DATE MAILED: 12/14/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,912

Applicant(s)

FLEISCHER ET AL.

Examiner

Brian J. Sines

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10-12, 19, 22-25 and 28-33 is/are rejected.
- 7) ☒ Claim(s) 6-9, 13-18, 20, 21, 26 and 27 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/14/2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

Claims 15, 16, 21, 26 and 27 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, claims 15, 16, 21, 26 and 27 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23 – 25 and 28 – 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 recites the limitation "method" in line 1. There is insufficient antecedent basis for this limitation in the claim. Method claim 23 is dependent and refers to apparatus claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

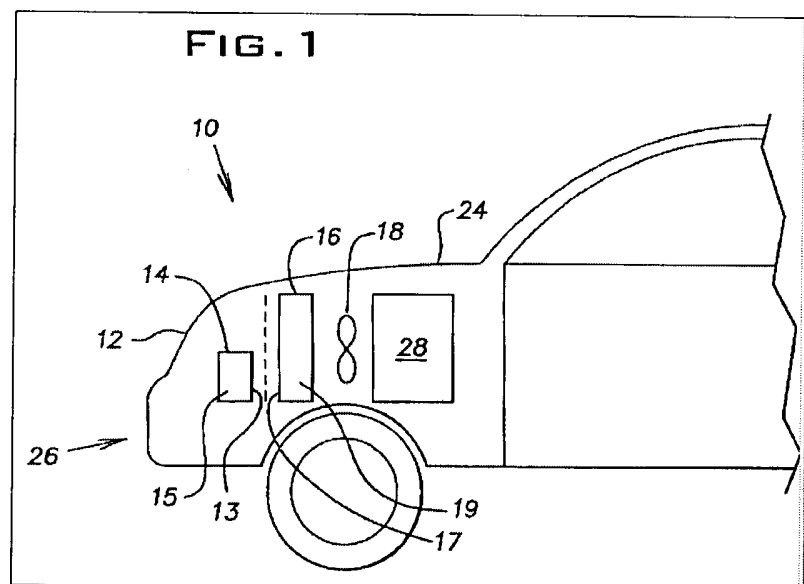
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 – 5, 10 – 12, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al. (U.S. Pat. No. 6,506,605 B1) in view of Frank et al. (DE 19924083 A1). Allen et al. teach a system for sensing catalyst coating loss and efficiency. Allen et al. specifically teach that the efficiency of the disclosed ozone-depleting or conversion system can be directly measured by sensing the ozone concentration in atmospheric air upstream and downstream of the heat exchange surface, such as an air conditioner condenser (14) and radiator (16), which is coated with an ozone-depleting catalyst (see col. 8, lines 1 – 4; col. 10, lines 6 – 12; figure 1).



Allen et al. is silent to the specific type of heated conductivity sensor utilized and monitoring system as claimed. Frank et al. do teach electrically-heated conductivity sensors for the detection of ozone (see Abstract). Hence, as evidenced by Frank et al., a person of ordinary

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skill in the art would have recognized the suitability of using an electrically-heated conductivity sensor for detecting ozone (see MPEP § 2144.07). In addition, these sensor systems disclosed by Frank et al., which rely on an electrical measurement response, are well known in the art to incorporate a monitoring means for monitoring the measured concentration (see MPEP § 2144.03). Furthermore, a person of ordinary skill in the art would accordingly have had a reasonable expectation of success of utilizing the heated conductivity sensors disclosed by Frank et al. with the diagnostic system disclosed by Allen et al. for monitoring ozone. The Courts have held that the prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. See *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986) (see MPEP § 2143.02). In addition, the Courts have held that the mere duplication of parts, without any new or unexpected results, is within the ambit of one of ordinary skill in the art. See *In re Harza*, 124 USPQ 378 (CCPA 1960) (see MPEP § 2144.04). Therefore, it would have been obvious to a person of ordinary skill in the art to incorporate a plurality of the electrically-heated conductivity sensors disclosed by Frank et al. with the system of Allen et al. in providing for the claimed diagnostic system for effectively monitoring ozone depletion. Regarding claims 2, 19 and 22, Frank et al. indicate that the ozone sensors have an operating temperature in the range of about 500 °C to about 700°C (see figures 5 & 6). Regarding claims 3 and 4, Frank et al. teach that the sensor comprises gallium oxide and indium oxide (see Abstract). Regarding claim 5, Allen et al. teach the incorporation of a catalytic element comprising a motor vehicle radiator (16) (see col. 8, lines 1 – 4; figure 1). Regarding claim 10, Allen et al. teach the incorporation of evaluation electronics (e.g., 64) and the sensor elements located in a common housing (24) (see col. 4, line 64 – col. 5, line 6; col. 9, lines 8 –

14; col. 16, lines 45 – 67; figures 7A, 7B & 10A – 10C). Regarding claim 11, Allen et al. anticipate that the sensor data is transmitted to an engine management or operating system (see col. 1, lines 1 – 22). Regarding claim 12, Frank et al. does indicate that the disclosed sensors are electrically-heated during use (see Abstract). Therefore, it is considered inherently anticipated that the plurality of sensors would at least be maintained at the same operating temperature during the measurement process (see MPEP 2112).

Allowable Subject Matter

1. Claims 6 – 9, 13, 14, 16 – 18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 6, the cited prior art neither teach nor fairly suggest the further incorporation within the apparatus, as taught by Allen et al. in view of Frank et al., a plurality of ozone sensors, which are each arranged in a housing having a gas-permeable membrane.

Regarding claim 13, the cited prior art neither teach nor fairly suggest that the measuring process is divided into two stages, wherein the ozone sensors in a first stage are kept at the same operating temperature, and at least one operating temperature on at least one of the ozone sensors being adjusted in a second stage.

Regarding claim 17, the cited prior art neither teach nor fairly suggest in each measurement a different signal from the ozone sensors are measured.

Regarding claim 20, the cited prior art neither teach nor fairly suggest a method further comprising the step of balancing each of the sensors characteristics with one another.

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2. Claims 23 – 25 and 28 – 33 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Ålleving et al. teach a system for determining the effectiveness of a catalytic coating on a catalytic converter for a motor vehicle. The additional cited prior art teach various ozone detection devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Sines, Ph.D. whose telephone number is (571) 272-1263. The examiner can normally be reached on Monday - Friday (11 AM - 8 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

